Foundations of Databases

Corrections to Slides

v2 – April 11, 2005

"Datalog":

- Slide 26:
  "**K**∪ new facts" should be: "**I** ∪ new facts"
- Slide 34:
  Definition of continuous operator: "$V \subseteq U$" should be changed to increasing chain $V \subseteq U$, i.e., $V = \{x_i \mid i \in \mathbb{N}\}$ and $x_i \leq x_{i+1}$, for all $i \in \mathbb{N}$." where $\mathbb{N} = \{0, 1, 2, \ldots\}$ are the natural numbers.
  In fact, Kleene's Theorem holds for continuous operators on complete partial orders $(U, \leq)$, which are those partial orders such that $sup(V)$ exists for each increasing chain $V \subseteq U$.

"Datalog Evaluation":

- Slide 6: Removing constants from the head as described makes rules unsafe. *Relation constants* (i.e., for each $c \in$ **dom** a unary relation R_c with fixed value $R_c = \{c\}$) avoid this problem. Then $p(..., c, ...) \leftarrow ...$ is rewritten to $p(..., x, ...) \leftarrow ..., R_c(x)$ where $x$is a fresh variable.

"Recursion in Relational Calculus and Algebra":

- Slide 5: "$\rho_{A \leftarrow To}(G)$" should be "$\rho_{A \leftarrow To}(T)$"
- Slide 8: "For each input G" one should be "In this case, for each input G"

"Datalog with Negation":

- Slide 16:
  Result of Evalute P_1 should be $\mathbf{J}_1 = \{man(dilbert)\}$. (The *edb* predicates must be respected as well).
- Slide 9:
  "$\mathbf{I}|edb(P) = \mathbf{J}|edb(P)$ implies $\mathbf{T}_P(\mathbf{I}) \subseteq \mathbf{T}_P(\mathbf{J})$"
  should be
  "$\mathbf{I}|edb(P) = \mathbf{J}|edb(P)$ and $\mathbf{I} \subseteq \mathbf{J}$ implies $\mathbf{T}_P(\mathbf{I}) \subseteq \mathbf{T}_P(\mathbf{J})$"